

THE 35 DEGREES LINE IN CHINA AND LARGE EARTHQUAKE PREDICTION (Abstract)

Guo Zengjian, Qin Baoyian

(*Earthquake Research Institute of Lanzhou, SSB, Gansu, China*)

There are three important geophysical senses along the lines of 35 degrees of north and south latitude:

1. Due to the earth's rotation, its equator and low latitudes uplift and its polar region and high latitudes sink. The boundary line between the uplifting and sinking regions is the lines of 35 degrees of north and south latitude.

2. The solar and lunar long period tidal force makes earth's equator and low latitudes an uplifting belt, and makes the polar region and high latitudes a sinking region. The boundary line between them is the line of 35 degrees of north and south latitude.

3. Earth surface absorb heating energy from sun and radiate a part of energy out to space. The result of receipts and expenditures is that there is surplus of energy in low latitudes and deficit of energy in high latitudes. The boundary between the surplus region and the deficit region is about the line of 35 degrees of north and south latitude.

The above-mentioned first two points make seismicity along the line of 35 degrees of latitude have some characteristics. As for the above-mentioned third point, it has some influences on the coupling between solid earth and atmosphere. In this paper we mainly discuss the seismicity characteristics along the line of 35 degrees of north latitude in China. For the sake of convenience, we call the above-mentioned line the 35 degrees line in the following.

1. There is a synchronicity for activity of earthquakes ($M \geq 6$) along the 35 degrees line. For example, counting earthquakes from east to west: the 1937 Heze (菏泽) earthquake ($M=7$) and its after-shocks ($M=6.7$) in Shandong Province, the 1936 Tianshui (天水)

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earthquake ($M=6$) and the 1936 Kangle (康乐) earthquake ($M=6.7$) in Gansu Province, and the 1937 Dulan (都兰) earthquake ($M=7.6$) in Qinghai Province. It is worthy to point that the occurrence time of the 1937 Heze earthquake ($M=7$) is not accordant with the high activity period in the north China (华北), whereas it response the high activity of earthquakes ($M \geq 6$) along the 35 degrees line in China.

2. In the eastern part of China, namely in the east from the South-North Seismic Belt along the 105 degrees of longitude east, earthquake activity is very strong in the north of the 35 degrees line, but that is relatively weak in the south of the 35 degrees line. It is interesting that in the United States continent there is the same seismicity pattern, namely, in the middle and east U.S. continent east from the west coast seismic belt, earthquake activity is relatively strong in the north of the line of 35 degrees of north latitude, while earthquake activity is relatively weak in the south of the line of 35 degrees of north latitude.

3. Earthquake activity along the 35 degrees line in China has an intermittent period of quasi 60 years and its multiples. It is possible that the intermittent period may be related to the period of 60 years of the earth's rotation.

4. The releveing survey map of China indicates, isolines of present tectonic vertical differential movement are meander in the great majority part of China, but the isolines of the vertical differential movement along the 35 degrees line are straight, trended by East-West and pass across the eastern part of China and insert into the interior of the Qinghai-Tibet plateau. It means some large earthquakes will occur along the 35 degrees line in China in future.

5. In the intersectant region of the 35 degrees line with other large active faults and with the South-North Seismic Belt, large earthquakes with magnitude of 7.5 and more often occurred in history. For example, the 1668 Tancheng (郯城) earthquake ($M=8.5$), the 1556 Huaxian (华县) earthquake ($M \geq 8$), the 1654 Tianshui (天水) earthquake ($M=7.5$) and the 1937 Dulan (都兰) earthquake ($M=7.6$).

According to the above-mentioned five points and taking into account the quasi-60 years period of earthquake occurrence from 1936—1937, we consider for 1996—1997 several large earthquakes will occur along the 35 degrees line in China. Among them, a great earthquake with magnitude of 7—8 will occur in the intersectant region between Xin-

jiang, Tibet and Kashmir. Because that this region is located around the side of the Qinghai-Tibet block and in the intersecting region of the 35 degrees line with some active faults trended by north-west, and in a large seismic gap. Besides, we should pay a special attention to that earthquake ($M=6-7$) will occur in the source region of the Yellow river and the Long river and in the southern part of Gansu Province for 1996—1997. It is worthy to be pointed, a segment of the 35 degrees line superpose the famous hanged river segment of the Yellow river in Henan Province. We have to monitor the earthquake situation along this segment.

35度线与大震预报

郭增建 秦保燕

(国家地震局兰州地震研究所)

北纬35度线是地球赤道到北极这一纬度区间的黄金分割线。在中国,大地水准测量发现该线以南上升,以北下降,这与地球自转和日月引潮力所形成的地球升降交界线相一致。在中国35度线上不同段上的强震活动有准同步性,且有准60年或其倍数年的间歇期。如上一活动期以1936—1937年为准,预计在1996—1997年和其前后几年该线上应有若干次强震活动。再者该线与别的斜向构造或地震带相交部位一般易发生7.5—8.5级大震。故预报在该线与喀喇昆仑构造交汇部位今后几年内可能会发生7—8级地震,在北西向断裂系与该线交汇的黄河源和长江源地区今后几年可能会发生7级左右地震。